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NEW RESULTS IN THE INVESTIGATION OF RUBBER.

The above title was given to a lecture delivered recently by Dr. O de Vries, Director of the Central Rubber Testing Station, Buitenzorg, Java, before an audience of Dutch planters. Dr. de Vries has been good enough to forward me a copy of the lecture in Dutch and to give permission for the publication of this translation. My thanks are due to Mr. J. W. C. Ellis, Assistant Controller of Labour, F. M.. S., for his kindness in translating the lecture. Since the lecture deals almost entirely with the results of the researches carried out by Mr. Grantham and myself, the details of which were communicated by us to Dr. de Vries during a visit last year to the Experimental Vulcanising Factory at the Agricultural Department, and since many of these results have not yet been published by us, it seems desirable to reproduce Dr. de Vries' lecture in this paper.

"About half a year ago at your former meeting held here Dr. Gorter told you something about the important question of the uniformity of plantation rubber. It is true that in these abnormal times we are not overwhelmed with observations on this subject; on the contrary the market is rising and observations on the crop abound on a falling market. Undoubtedly also the manufacturers know how to accommodate themselves to some extent to existing circumstances and organise their business in such a way that the lack of uniformity which was formerly such a source of trouble is no longer such a drawback. It is well known that they strive after uniformity in the one direction by mixing large quantities of plantation rubber into a homogeneous mass so that the differences in quality are levelled up, and in another by testing the various

samples and regulating the working of them according to the results of the tests. Although this question is thus not an acute one at the moment there is still no doubt that the lack of uniformity is and remains one of the chief defects of plantation rubber. It can only be a relief to us that for the present we are not burdened with these complaints, because it gives us time to consider the question in peace and arm ourselves as far as possible in anticipation of a change in the relation of demand to supply when a flood of criticisms will again pour over us.

So this is the question on which the Central Rubber Station hopes first to be able to throw light for the benefit of the estates which have joined it.

The quality in plantation rubber which at the moment is most liable to variation is the speed of vulcanisation (rate of cure). You all know that the vulcanisation of rubber consists roughly in a mixing of rubber and sulphur. It is true that the manufacturers include all sorts of other materials besides sulphur in their mixtures but these substances are intended to serve either to give the vulcanised rubber special qualities such as hardness or cohesion, or to make a cheaper product by "diluting" the rubber with cheap substances. So far has the skirting of difficulties in this art gone that in Germany now quantities of "rubber articles" are made which contain no fresh rubber. Necessity is the mother of invention. Especially in the reworking and reclaiming of used rubber goods great progress has been made and it may be that this re-worked rubber may in the near future be a more dangerous rival for our product than synthetic rubber.

To return to the subject. The combination of rubber and sulphur known as vulcanisation is governed principally by three factors:—temperature, period of curing, and proportion of the mixture. As regards the first, at ordinary temperature, no combination takes place, the mixture of rubber and sulphur remains the same putty-like dough as when first mixed. Only at higher temperatures does the elastic durable substance, which is required, come into being. The higher the temperature, the longer the curing of the rubber and the greater the amount of sulphur, the more the vulcanisation progresses. Secondly the longer the time a given mixture is heated to a given temperature the more sulphur unites with the rubber. Thirdly, the quantity of sulphur; a mixture with 10 per cent of sulphur will, in a given time at a given temperature, be further vulcanised than one with 5 per cent of sulphur.

In rubber experiments one usually works with a constant proportion of sulphur and a constant temperature. If different plantation rubbers are treated for the same period it appears that they are not vulcanised to the same degree: one is under-vulcanised, very elastic but not strong; another well vulcanised, very elastic and strong; a third perhaps over-vulcanised, not very elastic and brittle.

This difference in quality is naturally very trying to the manufacturer. Suppose he works out a formula for a certain sort of article: such and such a mixture to be heated to a certain temperature for so long. Then he buys a new lot of plantation rubber which for instance vulcanises more quickly; he treats it according to his tested formula; the result is that the goods may be over-vulcanised and lack strength. This entails great loss to the manufacturer and breeds distrust of plantation rubber.

This short introduction will be sufficient to remind you of the meaning of the terms and of the importance of the rate of cure. I assume that most of you, who were present at Dr. Gorter's address last September and the demonstrations at the Rubber Congress, are acquainted with the principal facts here mentioned.

I pass on to my own subject; the most important experiments in this connection which have recently been made known have principally been carried out by the Department of Agriculture at Kuala Lumpur. As I recently worked for a time in their vulcanising factory I was in a position to obtain a somewhat deeper insight into their experiments than it is possible to obtain from their publications up to date and I thought it would be interesting to tell you something about them. These experiments have shown where the differences in the vulcanisability of our rubber may lie. The cause once recognized, the way lies open not only for us in the future to avoid these differences, but possibly even for "vulcanisability" to be entirely at our command. We may now calmly indulge in the dream that the time will come when, on receipt of an order, we shall be able to deliver rubber not only of guaranteed good mechanical properties, but also of the degree of vulcanisability desired by the manufacturer, whether he wants for his purpose a rubber which vulcanises quickly, or one which vulcanises slowly. I hasten to add that this state of affairs is still far from realized and that it will cost a great deal of hard work before the ideal, whose gleam we see in the distance, is established so as to be of practical use.

You know that rubber, as we deliver it, only consists of about 95 per cent of rubber-hydrocarbon; the rest is albumen or protein, resin, mineral matter and a little water. It is especially the

"albumen" that interests us to-day. Stevens has already shown that there was some connection between this "albumen" and vulcanisability. It was also known that certain nitrogenous chemicals could serve to hasten vulcanisation and in the last few years a great number of such materials have been patented as aids to rapid vulcanisation. But the connection between these facts, the difference in vulcanising properties of plantation rubber, and present-day methods of preparation had not been traced. The greatest service rendered by Messrs. Eaton and Grantham of the F. M. S. Department of Agriculture is that they have notably extended our knowledge of this matter. From their experiments we may deduce the fact that it is not the actual "albumen" which affects the result, but the products of its decomposition. You all know that in the decomposition of albuminous matter, nitrogenous elements are set free. I only need to refer to the smell of rotten eggs and fish to remind you of your pleasant acquaintance with those materials. Or to take an example nearer home, and still nearer the factory, the smell of latex or coagulum which displays symptoms of putrefaction. The question then arose, have these natural decomposition products of the albuminous matter in rubber also the property of acting as accelerators of vulcanisation? And secondly:—"Do they, under the usual methods of preparation, appear in such differing quantities that they are really the cause of the differences in vulcanisability? Although Eaton's experiments are not yet brought to a conclusion in either direction we can foresee that both questions will be answered in the affirmative. I will not describe all of Eaton's experiments to you but only bring forward a few particular points. Eaton took a cake of rubber, the usual material in the process of making "sheet" and rolled it in the usual way by hand, with a wooden rolling-pin, but left the cake of the thickness of an inch without further working. Some serum drips out and the cake begins to dry, after a few days there is not only a rich growth of mould, but the cake begins to smell horribly, due to the decomposition of the albuminous matter. Finally some days later the cake was washed and creped and then examined. Eaton now found that the longer the cake was allowed to lie before further working and making into crepe the quicker the vulcanisation took place. After about six days a maximum was reached and the vulcanisability increased no more. The decomposition of the albuminous matter was clearly complete and the greatest quantity of decomposition-products (shewn by rate of cure) formed, which was obtainable under the circumstances.

A rubber which, normally prepared, needed about 3 hours for vulcanisation could thus be reduced by Eaton to 1¼ to 1½ hours—a

huge difference.

Another experiment affording clear proof of the matter in hand, was as follows:—Portions of a homogeneous coagulum were treated in this way.

1. The cake was laid on one side without any working and only washed and creped after 20 days.
2. The cake once rolled into a thick slab, kept for 20 days and then washed and creped.
3. The cake was once roughly creped, left for 20 days, and then further washed and creped.
4. The cake was passed a few times through the machine and made into a thick crepe.
5. The cake was thoroughly worked into a thin crepe.

The further we go on in this series, the more serum is pressed out of the rubber immediately after coagulation. When the rubber was examined the rate of cure proved to be 1, 2, $2\frac{1}{2}$, $2\frac{3}{4}$ and 3 hours respectively. It is thus quite clear that the more vulcanisation-accelerator is found, the more serum remains in the rubber, and that vulcanisability grows less in proportion as the rubber is more strongly pressed on the first day.

Eaton proceeded to further experiments. He treated the rubber chemically so as to get rid of the albuminous matter and the product of its decomposition (boiling with very diluted sulphuric acid). Rubber so obtained had a vulcanisation period of 6 hours instead of about 3 hours. Further he soaked the unworked coagulum in a solution of alkali; it was thus deprived of the last trace of acetic acid and an alkaline medium formed in which the disintegrating bacteria work with far greater force. By only one day's soaking in alkaline solution and ten days' keeping before washing and crepeing, Eaton obtained a rubber which vulcanised in the remarkably rapid time of half an hour. (The effect of alkali is now known to be specifically chemical and not biological. B. J. E.). This short sketch of the most important experiments will be sufficient to give you some idea of the extraordinarily important results obtained at the F. M. S. Department of Agriculture. They have not only taught us the previously unknown cause of the differences in vulcanisability of plantation rubber but have at the same time learned how to prepare rubber of rapid or slow vulcanisability at will. Formerly we only knew of rubbers which from unknown circumstances varied in such a way as to require $1\frac{1}{2}$ to 3 hours. Eaton can at will prepare rubber to vulcanise in half an hour or in 6 hours.

We will not now detain ourselves any longer over the details of these experiments, however interesting they may be, but we will put the question at once:—"What are the consequences in the practical preparation of rubber?" I hasten to add that most of the points still require further investigation and are far from being solved. I will merely refer to certain general possibilities to direct your attention to the most important points. Thus when testing of your rubber after vulcanisation shows that it is still not uniform, it may be easier for you to discover in which phase of the preparation improvement must be introduced.

Let us then consider preparation step by step.

1. The age of the trees, the climate, the soil and such conditions attending the cultivation, and also methods of tapping may exercise a natural influence on the composition of the latex, and on its proportion of albuminous matter or vulcanisation adjuncts. We know practically nothing about this. In fact we know extraordinarily little about the constituents of which latex is composed and it is great reason for rejoicing that the West Java Rubber Experimental Station have placed the composition of latex on their programme of work.

2. The lapse of time between tapping and coagulating may exercise a great influence. We all know that latex after standing any length of time begins to show signs of decomposition during which process it may be that these aids to rapid vulcanisation are formed.

3. The dilution of the latex at the time of coagulation and the quantity of acetic acid used may have some effect, as on this depends how much of the by-products is to be carried into the rubber and how much is to remain behind in the serum. Generally it is probably true that the more concentrated the latex and the more acetic acid used, the more material remains in the rubber. Too big a dose of acetic acid can also have another effect, for it hinders the decomposition of the albumen in the coagulated rubber, as appears from Eaton's experiment quoted above. From various provisional experiments Eaton concludes that great dilution in coagulation and an excessive quantity of acetic acid, say five times the quantity, are a handicap. I recently personally examined two samples which showed that doubling the usual quantity of acetic acid made no marked difference in the rate of cure. (Our experiments have also shown this. B. J. E.).

4. The coagulation period:—In connection with what has been said above it can naturally make a difference whether coagulation is affected in a quarter of an hour, in two hours or during a night.

5. The addition of chemicals:—Eaton found in certain cases that the anti-coagulants formalin and sodium sulphite delay vulcanisation somewhat, perhaps because they act as disinfectants and hinder the decomposition of the albumen and the forming of the vulcanisation adjuncts. The influence of bisulphite has not yet been determined at all. (The effect of bisulphite of soda on thin crepe rubbers has been shewn to be negligible. B. J. E.).

6. The interval between coagulation and rolling is an important point, as the experiments of Eaton which have been quoted will have shewn. But the provisional experiments of Eaton show that important changes do not take place during the first half day or whole day, so that the difference between working the rubber on the same day or the following day will probably not be very great. The most important changes in the albumen take place on the second or third day when the cake is partially dried.

7. The experiments quoted will also show you that the rolling may be of great importance. The thinner the crepe, the more serum pressed out of it, the more difficult the rubber will be to vulcanise. Eaton has already shown this in numerous experiments. Eaton is of opinion, on the strength of his experiments, that continued crepeing, once the crepe has been made thin, has no further undesirable effect upon vulcanisability, or possibly simply in the direction that continued washing will remove a further small quantity of nitrogenous products.

8. Drying and smoking may also be of great consequence. In preparing crepe we have to do with drying only; from what has been said above, it follows that rapid drying hinders the formation of these vulcanisation adjuncts. (This has since been proved definitely in the case of sheet. B. J. E.). In the preparation of sheet the proceeding is more complicated. It would take me too long to go into this in detail. I could speak for a whole evening of the smoking of rubber. Let it suffice to remind you that the usual smoking process consists of two main processes, which must be distinguished:—drying and smoking (or disinfecting). Two things are done with the fire, stoking and smoking. The stoking may be the provision of heat with a strong current of air resulting in rapid drying, or the provision of heat with little air resulting in the maintenance of a hot damp atmosphere. The last probably will favour the decomposition of the albumen and the formation of aids to vulcanisation. Rapid drying, as in the preparation of crepe will hinder the formation of decomposition products. Finally smoking or disinfecting, according to Eaton, delays vulcanisation, as we might expect. (Our theory at present with respect to smok-

ing is that quoted by de Vries—we have to deal with three factors—heat. smoke and moisture. B. J. E.). I cannot forbear remarking how in this matter again we find overwhelming evidence of the need for investigation of rubber in the tropics side by side with the investigation in Europe. The experts in Europe, who do not know the details of the preparation of the various samples of smoked-sheet which they examine, found that, on an average, smoked sheet vulcanises quicker than crepe, and draw the conclusion that smoking exercises a favourable effect on quality and hastens vulcanisation. Only the investigation in the tropics can clear up this point. Eaton's experiments go to show that smoking in itself hinders vulcanisation, and that the heating in a damp atmosphere in the smoke-house during the first few days causes the greater vulcanisability.

Finally the light afforded us by Eaton can give us a lead in the investigation of rubbers prepared by other processes, *e.g.*, the Para method, "smoking" in the air or by heating (the process of Kerbosch, Schadt, etc.). It is well-known that Para rubber vulcanises relatively slowly. On the contrary rubber obtained by ordinary "smoking" vulcanises quickly. We shall thus have to examine the various constituents of the serum which cause this different behaviour.

Time fails to proceed to further details of the preparation of rubber. I would also rather wait until I can give you definite facts and data in place of hypotheses. The experiments are not yet nearly concluded in this respect. Apart from the continuation of Eaton's experiments, a series of proceedings of the Information Bureau at Delft will soon reach us, giving important data on these questions. The provisional results obtained by Eaton seemed however sufficiently important to me to try and give you full information about them in their present condition and to direct your attention to certain points which, in the near future, when the experiments are continued, will probably be of extraordinary importance.

(Note:—Many other experiments, details of which are being published shortly have taken the problem from the realm of hypothesis to the world of facts and have shewn us definitely that one of the factors causing acceleration in rate of cure is a decomposition product of the protein; we have also found that another factor present in the latex itself is also invloved, and this factor has been the cause of many anomalies which are now being clearcd up. B. J. E.).

B. J. E.

CHINESE VINEGAR AS A COAGULANT.

By B. J. Eaton.

Enquiries having been received *re* the use of Chinese vinegar as a coagulant, samples of this substance were purchased on the local market in Kuala Lumpur and have been investigated in the Chemical laboratory.

Chinese vinegar like English and other continental vinegars consists essentially of a dilute solution of acetic acid, but whereas the English malt vinegar is brown, Chinese vinegar is colourless. Chinese vinegar is probably prepared by the acetic fermentation of alcohol from rice, hence its colourless nature.

The following results were obtained on analysis of samples purchased from different Chinese shops in Kuala Lumpur. The price per gallon of pure acetic acid calculated on the acid content of the samples examined is also given; this has been calculated from the amount of Chinese vinegar bought for 10 cents, and based on the strength of the samples. These prices are approximate, since larger quantities of the vinegar could no doubt be purchased more cheaply. It is practically certain however that if a demand arose for this vinegar as a coagulant, the price would increase considerably. It will be seen that the prices do not compare at all favourably even with present ruling prices of glacial acetic acid, at say $45/- per demijohn (4½ gallons approx.), which is equivalent to about $10/- per gallon. No coagulations have yet been made by me with this vinegar, but it may safely be stated that its coagulating power will be similar to acetic acid of a similar strength and that the rubber coagulated with it, will be similar to acetic acid coagulated rubbers.

Ref. No.	Amount purchased for 10 cts.	Acetic acid per cent.	Cost per gallon calculated for pure acetic acid.
1	17 fl. ozs.	2.6	$36.20
2	16½ „	5.6	17.31
3	22½ „	4.05	17.55
4	18 „	6.2	14.33
5	15½ „	4.8	21.38
6	16 „	3.9	25.64
7	18 „	4.2	22.49
8	?	5.3	—

Remarks:—Sample No. 1 is possibly an adulterated sample. In any case if the average analysis of Chinese vinegars shows an acetic acid content of 4 to 6 per cent, such a sample should not be sold and the investigation of Chinese vinegars under the Food and Drugs' Act might be desirable. One feature which is of interest in connection with several of the samples, was the presence of the vinegar Eel (Anguillula aceti) probably the same species as is known to be present in some English Vinegars and is a well-known disease of such vinegars. It is stated that, if neglected, the presence of this pest may cause putrefaction and spoiling of the vinegar. It may be eliminated by frequent and thorough cleaning of all apparatus, pasteurization of liquids and light sulphuring of empty casks, in which the vinegar is prepared or stored. Sample 8 which was received from an estate manager in Kedah also contained large numbers of this pest.

Mr. Whitby (Chemist to the Société Financière etc.) informs me that three qualities of Chinese vinegar are imported, having the following strengths—8 per cent, 4-5 per cent and 4 per cent. The vinegar having the highest acetic acid content is the most economical. Two samples examined by Mr. Whitby contained 8.1 and 7.4 per cent of acetic acid; 36 katis (=48 lbs.) of this acid could be purchased recently at $4.50. This corresponds to about $11.75 per gallon calculated for pure acetic acid, assuming an acid content of 8 per cent, or equivalent to glacial acetic acid at about $50/- per demijohn.

Minutes of Meeting of the

PLANTERS' ASSOCIATION OF MALAYA,

held at the Klang Club, Klang, on June 25th 1916, at 11.30 a.m.

PRESENT: Mr. J. D. McCulloch (in the Chair).

and the following *Delegates*:

From Batang Padang D.P.A.:—	Messrs.	C. B. Graburn and T. H. B. Phillips.
„ Batu Tiga D.P.A.:—	„	H. L. Jarvis and T. J. Cumming.
„ Central Pahang P.A.:—	Mr.	P. J. A. Williams.
„ Central Perak P.A.:—	„	J. S. Ferguson.
„ Kajang D.P.A.:—	Messrs.	R. C. M. Kindersley and O. P. Dakeyne.
„ Kapar D.P.A.:—	„	L. Mooijaart and Noel Fisher.
„ Klang D.P.A.:—	„	C. A. Buxton and E. B. Prior.
„ Kuala Langat D.P.A.:—	„	R. W. Munro and C. B. Colson.
„ Kuala Lumpur D.P.A.:—	„	F. G. Harvey, F. Clyde Jeavons, H. Armstrong and W. Leggatt.
„ Kuala Selangor D.P.A.:—	„	J. B. Orr, R. S. McCulloch and S. F. Money.
„ Malay Pen. Agr. Asson.:—	Mr.	J. W. Kennedy.
„ Negri Sembilan P. A.:—	Messrs.	A. Dupuis Brown and J. Bruce.
„ Taiping P. A.:—	„	W. Cookson and W. C. A. Knight.
„ Ulu Selangor D. P. A.:—	Mr.	M. D. Fallon.

Honorary Member: The Hon'ble Mr. E. Macfadyen.

Visitors: Messrs. M. A. P. Gilman, H. R. Quartley, N. K. Bain, Carlyle Bell, W. Sperling, A. F. Spooner, R. N. Hendrie, Chris. Harrison, R. Battiscombe, and G. G. Taylor.

Secretary: Mr. H. C. E. Zacharias.

1. The Secretary having informed the meeting of the Chairman's absence in India, Mr. J. D. McCulloch, on the proposition of Mr. R. W. Munro, seconded by Mr. L. Mooijaart, takes the chair.

2. The Minutes of the Annual General Meeting, held on April 26th 1916, are taken as read, confirmed and signed.

3. Recruiting in India.

The *Secretary* reports the receipt of the following Notifications from the Controller of Labour:—

No: 6 in 150/1916. Kuala Lumpur, 29th May, 1916.

Sir,

I have the honour to inform you that a few recruiting licenses are still being held back in the following districts of Madras: Salem, Coimbatore and the Palani Taluq of Madura.

The licenses will be freed as soon as the Fort St. George Gazette notifications declaring the districts infected are cancelled.

All licenses of Kanganies in the Salem district have been released, with the exception of a few held by Kanganies who actually live in villages which are known to be infected.

I have, &c.,
(Sgd.) J. R. O. Aldworth,
Controller of Labour, F. M. S.

The Secretary,
Planters' Association of Malaya,
Kuala Lumpur.

No. 8 in 150/1916.

Kuala Lumpur, 10th June, 1916.

Sir,

I have the honour to inform you that the Superintendent of Emigration Depot, Negapatam, reports that the epidemic may now be considered to have ended in the districts of Coimbatore, Madura and Salem and he has released the licenses which he had detained.

I have, etc.,
(Sgd.) J. R. O. Aldworth,
Controller of Labour, F. M. S.

The Secretary,
Planters' Association of Malaya,
Kuala Lumpur.

and reports the despatch of the following letter *re* Dr. Foston's retirement, as instructed at the last meeting:

Kuala Lumpur, 6th May, 1916.

Controller of Labour, F. M. S.,
Kuala Lumpur.

Sir,

I have the honour to inform you that at the last Meeting of this Association held on the 26th ulto., a vote of thanks to Dr. Foston was passed on his retirement after over 15 years' valuable services rendered by him to the whole planting industry, both as Superintendent of the Straits Settlements Emigration Depot and as Federated Malay States Emigration Agent at Negapatam.

I shall be glad if you would kindly convey this vote to Dr. Foston, and thanking you in anticipation for your courtesy,

I have, etc.,
(Sgd.) H. C. E. Zacharias,
Secretary.

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4. Magistrate at Port Swettenham.

The *Secretary* reads the following correspondence:—

Kuala Lumpur, 6th May, 1916.

Under Secretary, F. M. S.,
Kuala Lumpur.

Sir,

I have the honour to draw your attention to the difficulty of apprehending absconding coolies at Port Swettenham owing to the fact that the only Magistrate at Port Swettenham, authorised to issue warrants, is the Harbour Master, whose business requires his absence from office most time of the day.

I have therefore been instructed to submit to you the advisability of granting the necessary powers to the Supervisor of Customs or to some other suitable official, permanently stationed at Port Swettenham.

I have, etc.,
(Sgd.) H. C. E. Zacharias,
Secretary.

No. 4590/1915.

Kuala Lumpur, 26th May, 1916.

Sir,

I am directed to acknowledge receipt of your letter of the 6th May, 1916, on the subject of the difficulty of apprehending absconding coolies at Port Swettenham and to inform you that your letter has been referred to the British Resident, Selangor.

I have, etc.,
(Sgd.) W. Mackray,
for Under Secretary, F. M. S.

The Secretary,
Planters' Association of Malaya,
Kuala Lumpur.

Mr. *McCulloch* takes it that they had better await the promised reply.

Agreed to.

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5. Registration Fee of Locally Recruited Labourers.

The *Secretary* reports the following correspondence:—

Kuala Lumpur, 6th May, 1916.

J. R..O. Aldworth, Esq.,
Chairman, Indian Immigration Committee,
Kuala Lumpur.

Sir,

I have the honour to inform you that at the Annual Meeting of this Association held on the 26th ulto., I was instructed to ask for your favourable consideration of raising the fee for locally recruited coolies to $5 per head.

I have, etc.,
(Sgd.) H. C. E. Zacharias,
Secretary.

Office of the Controller of Labour,
No. 2 in 242/1916. S. S. and F. M. S.,
Kuala Lumpur, 11th May, 1916.

Sir,

I have the honour to acknowledge receipt of your letter dated the 6th May current asking for favourable consideration of a proposition for the raising of the fee payable on registration of locally recruited coolies to five dollars a head.

2. I brought forward your letter for discussion at a meeting of the Indian Immigration Committee held in this office on the 8th of this month. No motion was proposed in favour of an increase of the fee, which the members of the Committee realise is fixed by statute and is not subject to revision by themselves.

I have, etc.,

(Sgd.) J. R. O. Aldworth,
Chairman, Indian Immigration Committee.

The Secretary,
Planters' Association of Malaya,
Kuala Lumpur.

Mr. *Mooijaart* expresses the belief that it had been originally intended that the fee should be one dollar per head, but as a result of the ruling of the Court on the wording of the law any number could now be registered for one dollar. He understood that the Government admitted this and suggests that the Under Secretary be written to and an amendment of the Code requested, in accordance with the provision as originally intended. He knew of one case in which 120 coolies had been registered for one dollar.

Mr. *Harvey* seconds the proposal and bears out Mr. Mooijaart, viz: that the present state of affairs was simply due to the bad drafting of the section in question.

Mr. *Noel Fisher* would like to propose that the Government be asked to state their reason for opposing an increase of the fee. There was an idea that this would affect the liberty of the coolie, but it was not so, as the cooly had not got to pay the fee, but his prospective employer.

Mr. *Phillips* agrees and points out that even if the fee was such as to make an employer hesitate before engaging a locally recruited man, and even if the coolie in that case had to pay the registration fee himself; there was no real hardship about this, as he had to pay his passage to India himself anyhow, and there was no reason why he should not incur a similar expense on moving to another part of the Peninsula as he had on going to India. As regards unhealthy places, the authorities now saw to it that such must obtain their labour direct from India.

Mr. *Jeavons* is of opinion that this matter only needed constant urging, to be eventually acceded to by the Government.

Mr. *Jarvis* disagrees and deprecates pressing this matter. It was obvious that there was not enough labour in the country and no penalty on local recruiting would increase the total supply. What he thought ought to be urged, was the tapping of new recruiting districts in India. That was the sort of thing on which the Government ought to be asked to spend more money.

Mr. *Graburn* agrees with the last speaker in so far at least as he thought that even a registration fee of $5 per head would not stop "local recruiting." A trained tapper was cheap at $5. The real grievance to him seemed to be the reading of Section 225 of the Code, viz, that the incitement of a coolie to give notice to his employer was not held to be crimping. It was a preposterous state of affairs and one which should be put a stop to.

Mr. *Kindersley* gathers from the correspondence that the planting members on the Indian Immigration Committee did not seem to have been in favour of raising the fee in question.

Mr. *Ferguson* asks whether it would not be possible to get at local recruiters through the assessment, viz: differentiating between locally recruited portions of each labour force and those not so recruited.

Mr. *Macfadyen* reminds Mr. Ferguson that at present the assessment was not levied on individuals employed, but on averages. To carry out Mr. Ferguson's idea, required an alteration in the whole method of assessment and it was obvious that the Government would not fail to realize the object of such proposed change. As he had said before, the attitude of their Government was expressed in the words of H. E. the High Commissioner at a Federal Council Meeting in 1915, viz: that his ideal in this connection was that coolies should not be required to give more than 24 hours' notice to their employers. It was obvious that as long as these views prevailed, it was just wasting their time to approach the Government.

As regards the meeting of the Indian Immigration Committee referred to in the correspondence, he had attended that meeting, but had no recollection of the matter having been brought up. If they wished him to do so, he would personally undertake to see to it that the matter was discussed at the next meeting of the Indian Immigration Committee.

This is agreed to and Mr. Mooijaart withdraws his proposal accordingly.

6. Section 66 (II) of Labour Code.

The *Secretary* reports that the Standing Committee had considered this matter, as instructed, and had resolved to enlist the assistance of the Indian Immigration Committee, and that the following correspondence had ensued:—

Kuala Lumpur, 29th May, 1916.

J. R. O. Aldworth, Esq.,
Chairman,
Indian Immigration Committee,
Kuala Lumpur.

Sir,

I have the honour to refer you to a Resolution passed at the last Annual General Meeting of this Association in connection with the engagement and registration of local coolies, recommending that in case of failure to comply with Section 66 (i) of the Labour Code, the prosecution should be undertaken by the Labour Department and not by the employer.

The Standing Committee have now instructed me to enquire, with a view to enlisting your assistance in this direction, whether your Committee agrees that officers of the Labour Department should take action as suggested by this Association.

I have, etc.,
(Sgd.) H. C. E. Zacharias,
Secretary.

No. 2 in 274/1916.

Kuala Lumpur, 31st May, 1916.

Sir,

In acknowledging receipt of your letter, dated the 29th May current, referring me to a Resolution passed at the last Annual General Meeting of the Planters' Association of Malaya in connection with the engagement and registration of local coolies, recommending that in case of failure to comply with Section 66 (i) of the Labour Code, the prosecution should be undertaken by the Labour Department and not by the employer, I have the honour to inform you that the letter is receiving attention.

I have, etc.,
(Sgd.) J. R. O. Aldworth,
Chairman, Indian Immigration Committee.

The Secretary,
Planters' Association of Malaya,
Kuala Lumpur.

Mr. *Fallon* quotes a recent case of his own, in which 7 old coolies of his were working on a neighbouring native holding. The latter had never made any return whatsoever! He had been to the Labour Department and had been given a form to fill up. He found that the whole of this prosecution would have to be conducted by him and as one difficulty instanced, how he was to know the present names of these coolies?

Mr. *Harrison* says that he had spoken on this subject at their last meeting and had since ascertained that to "lay a complaint" was held to refer to a Magistrate and not to the Controller of Labour.

Mr. *Mooijaart* instances a recent case in which a man was convicted for not registering one locally recruited cooly. As a matter of fact there were 16 of them, but as a private individual he could only get a conviction in respect of one of them. Had the Labour Department prosecuted, they would of course have brought in all sixteen cases.

Mr. *McCulloch* suggests that the Secretary request a reply to his letter of May 29th.

Agreed to.

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7. Crimping.

The *Secretary* reports that the case of Crimping by letter, referred to on page 20 of their last minutes, had been submitted to Counsel, whose reply was as follows:—

Opinion as to Crimping by letter.

From the correspondence forwarded to us we gather that Mr. Arnold applied to Mr. Donaldson for a warrant to arrest one Moddyan Kangany, who was alleged to have written a letter to a coolie named Muttu Carpen, and to four other coolies; in consequence of which Muttu Carpen absconded and was subsequently arrested on the estate on which the said Moddyan worked. Mr. Donaldson, who is a Magistrate of great experience, does not seem to have actually refused to issue a warrant, but to have pointed out that if he did issue one, Mr. Arnold, at the trial would have to prove that the letter in question was actually written by Moddyan or signed by him, and that unless he did so the letter was useless as evidence, and that Muttu Carpen would no doubt deny that it was written by him.

Section 134 (i) of the Criminal Procedure Code is as follows:—

"The Magistrate before whom a complaint is made may dis-
"miss the complaint if, after examining the complainant and re-
"cording his examination and considering the result of the en-
"quiry (if any) made under the last preceding section, there is in
"his judgment no sufficient ground for proceeding."

Section 67 of the Evidence Enactment is as follows:—

"If a document is alleged to be signed or to have been written
"wholly or in part by any person, the signature or the handwriting
"of so much of the document as is alleged to be in that person's
"hand-writing must be proved to be in his hand-writing."

In other words, a letter written by one person to another does not prove itself, and, bearing that rule of law in mind, Mr. Donaldson pointed out to Mr. Arnold that it would be necessary for him to show that the letter in question was in fact in the hand-writing of Muttu Carpen. This, we understand, although it is not actually so stated in the correspondence, Mr. Arnold was unable to do.

We think, if our rendering of the facts is correct, that it is clear from the Section of the Evidence Enactment mentioned above that Mr. Donaldson rightly thought the issue of a warrant against the Kangany would be a waste of time and only lead to his acquittal on trial, and that his opinion of the law of evidence was entirely correct.

We have communicated with Mr. Arnold but have been unable to see him. We do not think however that he could have added anything directly bearing on the point raised. The question involved is entirely one of the law of evidence, and not, on the material before us, one of fact.

The opinion of
FREEMAN AND MADGE.

Kuala Lumpur, 8th June, 1916.

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8. Arrest of Absconders.

The *Secretary* reports the following correspondence:

Kuala Lumpur, 6th May, 1916.

Commissioner of Police, F. M. S.,
Kuala Lumpur.

Sir,

I have the honour to draw your attention to recent cases of defiance of the Police in the execution of their duties, when trying to arrest absconding coolies. It appears that in several cases the police constables sent have been met by the whole labour force of

the estate concerned and that, in consequence of their threatening attitude, these warrants of arrest have never been executed, nor do any consequent proceedings appear to have been taken and the whole matter seems to have been allowed to drop.

I am instructed to submit that it is not in the public interest that such flagrant defiance of the law should be passed over, and that you will issue instructions to make the recurrence of such cases impossible.

I have, etc.,
(Sgd.) H. C. E. Zacharias,
Secretary.

No. C.P. 584/16.

Kuala Lumpur, 10th June, 1916.

Sir,

I have the honour to acknowledge the receipt of your letter dated the 6th May, on the subject of abortive action by the Police on cooly warrants. It would have facilitated enquiries had you favoured me with a reference to the instances you refer to in your letter, and I trust you will do so now.

2. In the meantime I have caused enquiries to be made in Selangor and am informed that no incidents of the kind have occurred in that State recently. Details of two cases are reported, one at Bukit Rawang on the 21st December last in which 10 obstructors received sentences of some severity; the other was a Kapar case in which the arrest of a woman named Chinamah was obstructed with the result that two coolies were fined.

I have, etc.,
(Sgd.) W. L. Conlay,
Ag: Commissioner of Police,
Federated Malay States.

H. C. E. Zacharias, Esq.,
Secretary to the
Planters' Association of Malaya,
Kuala Lumpur.

Kuala Lumpur, 22nd June, 1916.

The Commissioner of Police, F. M. S.,
Kuala Lumpur

Sir,

I have the honour to acknowledge receipt of your letter 584 of the 10th inst.

I have made further enquiries and have now ascertained the following case, which forms the basis of the complaint made at our Annual Meeting:

At Gumus Estate (Slim River Station), belonging to Mr. Loyieo. Achin, Poovan, Sebastian (of P. W. D.) and Velupillai (of P. W. D.), on the 2nd April, 5 bolters from Sungei Choh Estate were identified by Kangany Lachman of the said estate who went there and to another Estate at the 8th mile (under the same management) with the Police and warrants. When the Police tried to arrest these absconders, the other coolies turned out with sticks and the Police ran away. On the 4th of May, the Conductor of Sungei Choh Estate went there again accompanied by the Police. He saw the absconders working in the field but they ran into the jungle and no arrest was effected. On the 10th of May, the Conductor again went up as the manager had told him that he would be paying these coolies on that day, but on arrival the Sungei Choh Conductor found that the coolies in question had been paid previously and had disappeared.

The Manager of Sungei Choh Estate apparently wrote to the Police Inspector at Tapah reporting the matter and expecting that he would send back to the estate the constables with reinforcements and also make them to identify the coolies who had interfered in the execution of their duties. Nothing however was done and the manager then referred the matter to the Controller of Labour, who on his part, I believe, reported to the Deputy Commissioner of Police, Perak. Nothing further has been heard of the matter, which the Manager of Sungei Choh Estate therefore takes it to have been shelved.

I have, etc.,
(Sgd.) H. C. E. Zacharias,
Secretary.

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9. Alienation of Large Areas.

Mr. *Jarvis* had heard that the Government was granting a big company some 21,000 acres of land, which, he understood, was to be planted up with rubber and coconuts. He had not been told the locality of this land, but he felt sure that some arrangements should be made as regards the recruiting of coolies for this undertaking. He understood that the land was to be opened up quickly, probably in one year. A large number of coolies would be required, which was likely to affect the present labour question and cause still greater shortage. He would like to have some inform-

ation as to whether this company was to recruit labour in India or China and proposes that the Secretary be instructed to enquire if the Government had made a grant of several thousand acres to a certain Company for agricultural purposes, and if there was a clause in the grant providing that adequate labour be recruited from outside the country.

Mr. *Macfadyen* thinks it of doubtful utility to write official letters on a subject, of which they knew so little. He therefore suggests that the Secretary be asked to elicit the necessary information by personal interviews and that when this information was available, he submit same to their Standing Committee.

Agreed to.

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10. Currency.

The *Secretary* reads the following correspondence:—

Kuala Lumpur, 6th May, 1916.

Under Secretary, F. M. S.,
Kuala Lumpur.

Sir,

"6/4962."

In continuation of my letter of February 1st, I have been instructed to inform you that, in view of the small number of coins now available, this Association considers it advisable, not to put these into circulation, but rather to wait, until the opportunity offers of obtaining the amount originally asked for.

I have, etc.,
(Sgd.) H. C. E. Zacharias,
Secretary.

No. 11 in 4962/15.

Kuala Lumpur, 15th May, 1916.

Sir,

I am directed to acknowledge receipt of your letter of the 6th May 1916, on the subject of the increase in the number of ¼ cent and ½ cent coins in circulation.

I have, etc.,
(Sgd.) C. C. Brown,
for Under Secretary, F. M. S.

The Secretary,
The Planters' Association of Malaya,
Kuala Lumpur.

Colonial Secretary's Office,
Singapore, 5th June, 1916.

No.Misc. 5757/15.

Sir,

With reference to your letter of the 9th September, 1915, I am directed to inform you that action is being taken to mint $10,000 worth of ¼ cent, and $15,000 worth of ½ cent copper coins.

2. It will be some months, at least, before the coins are ready for issue.

I have, etc.,
(Sgd.) E. C. H. Wolff,
for Ag: Colonial Secretary,
Straits Settlements.

The Secretary,
The Planters' Association of Malaya,
Kuala Lumpur.

Mr. *McCulloch* says this was very satisfactory and pays a tribute to Mr. Leggatt's endeavours in this direction, to which this result was principally due.

Mr. *Macfadyen* enquires whether the new coins are to be called "Half Leggats" and "Quarter Leggats." (Laughter.)

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11. Toddy.

The *Secretary* submits the following correspondence:—

No. 5618/15.

Kuala Lumpur, 3rd May, 1916.

Sir,

I am directed by the Chief Secretary to address you on the subject of the sale of toddy in these States and the conditions under which licenses for toddy shops are at present issued.

2. As you are aware, tenders are invited for these licenses for fixed periods. The present licenses expire on the 30th June next and the Chief Secretary would be glad to know whether you have any suggestions to make on the subject before fresh licenses are granted. I am also to ask whether you think that any good purpose would be served by the appointment of a small Committee to

consider the general question of the sale of toddy and to draw up draft rules for its control.

I have, etc.,
(Sgd.) S. McArthur,
Under Secretary, F. M. S.

W. Duncan, Esq.,
Chairman,
Planters' Association of Malaya,
Kuala Lumpur.

The Under Secretary, F. M. S.,
Kuala Lumpur.

Penang, 8th May, 1916.

Sir,

I have the honour to acknowledge receipt of your letter 5618/15 of 3rd May on the subject of the sale of toddy in the F. M. S. and the conditions under which licenses for toddy shops are at present issued.

1. In reply I would state that there is a strong feeling amongst employers of labour that the evils arising from the consumption of toddy under present condition could be greatly mitigated by the introduction of measures which would ensure that toddy offered for sale was unadulterated and wholesome and I beg leave to forward for the information of the Chief Secretary a copy of Minutes relative to the discussion which took place on the subject of "Toddy" consumption at the last meeting of the P. A. M. held at Kuala Lumpur on 24th April.

2. From the discussion and the resolutions which were passed at that Meeting the need for immediate action was emphasized and I am of opinion that the appointment of a small Committee at an early date to consider the general question would serve an excellent purpose and meet with the approval of all employers of labour.

I have, etc.,
(Sgd.) W. Duncan,
Chairman, Planters' Association of Malaya.

No. 5618/1915.

Kuala Lumpur, 22nd May, 1916.

Sir,

I am directed by the Chief Secretary to Government to inform you that the Government has decided to appoint a small Committee

to enquire into the general question of the sale of toddy in the Federated Malay States and to draw up draft rules for its control and that the Chief Secretary would be obliged if your Association would be so good as to nominate two of its members to serve on this Committee.

2. Should your association be willing to meet the Chief Secretary's wishes in this matter I am to request that you will kindly inform me of the names of the gentlemen so nominated.

3. The Government officers who will be appointed as members of this Committee are the Controller of Labour and the Senior Health Officer, Federated Malay States.

I have, etc.,
(Sgd.) W. H. Mackray,
for Under Secretary, F. M. S.

The Secretary,
The Planters' Association of Malaya,
Kuala Lumpur.

Kuala Lumpur, 29th May, 1916.

Under Secretary, F. M. S.,
Kuala Lumpur.

Sir,

"5618."

I have the honour to acknowledge receipt of your letter of the 22nd inst. and note with pleasure that the Chief Secretary, is about to appoint a small Committee on the subject of the sale of Toddy.

I am directed to submit to you the names of two members of this Association who have been nominated for this purpose, as desired by you, viz: Mr. L. Mooijaart of Kapar and Mr. A. R. Morgan of Bagan Serai, Perak.

I have, etc.,
(Sgd.) H. C. E. Zacharias,
Secretary.

No. 5618/1915.

Kuala Lumpur, 10th June, 1916.

Sir,

I am directed to acknowledge, with thanks, the receipt of your letter of the 29th May, 1916, informing me that Messrs. L. Mooijaart and A. R. Morgan have been nominated by the Planters' Association of Malaya to serve as Members on the Committee appointed to inquire into the question of the sale of toddy in the

Federated Malay States and to draw up draft rules for the control of that traffic.

2. I am now to ask that you will kindly request those two gentlemen to communicate directly with the Controller of Labour, Federated Malay States, in regard to the dates of the sittings of the Committee and other arrangements in connection therewith.

I have, etc.,

(Sgd.) W. H. Mackray,
for Under Secretary, F. M. S.

The Secretary,
The Planters' Association of Malaya,
Kuala Lumpur.

The *Secretary* further explains that the nomination of Messrs. Mooijaart and Morgan had been made by the Standing Committee and he understood that the commission in question had already held its first meeting.

Mr. *Mooijaart* in reply to a question from the Chairman, thinks it rather premature to say anything as yet, but mentions that until the Committee send in their report the licenses were being issued only from month to month. (Applause.)

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12. Quitrent.

The *Secretary* reports that by Notification 1623 of May 19th, the previous notifications of Oct. 1st and November 12th 1915 had been cancelled.

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13. War Relief.

The Secretary reports the receipt of the following contributions since April 1st.

Batang Padang	$351.12
Batu Tiga	615.00
Central Pahang	—
Central Perak	871.00
Johore	167.00
Kajang	523.00
Kapar	1,001.70
Kelantan	820.39
Klang	975.00
Kuala Langat	—
Kuala Lumpur	279.84

Kuala Selangor	693.84
Lower Perak	341.00
M. P. A. A.: Prov. Wellesley and Penang	431.28
Kedah	255.66
Krian	816.73
Negri Sembilan	30.00
Taiping	1,057.38
Ulu Selangor	740.07
	$9,970.01

Of this, £1,000 had been remitted to the London Committee.

He also submits the following letter:—

Kuala Lumpur, 9th June, 1916.

The Secretary,
The Planters' Association of Malaya,
Kuala Lumpur.

Dear Sir,

I beg to enclose for your information copy of letter dated 4th May from Sir William Taylor, from which you will observe the full constitution of the General Committee for the No. 2 Fund and that a meeting of the Committee was to be held after the arrival in England of Mr. W. F. Nutt.

You will also note the two payments made. The applications for aid thus far are small but later on they will doubtless, as Sir William Taylor remarks, be much more numerous.

The financial position of the Fund in London is also summarized by Sir William Taylor.

I am, etc.,
(Sgd.) H. P. Clodd,
Hon. Secretary,
F. M. S. War Relief Fund.

(Copy).

4th May, 1916.

Sir,

F. M. S. War Relief Fund No. 2.

I have the honour to acknowledge the receipt of your letter of the 7th April, and have noted the contents.

The General Committee has now been constituted as follows:—

Sir Frank Swettenham, G.C.M.G., Sir William Treacher,

K.C.M.G., Sir Ernest Birch, K.C.M.G., Mr. E. J. Brewster, Mr. W. R. H. Chappel, Mr. F. Douglas Osborne, Mr. A. S. Baxendale, Capt. E. A. O. Travers, R.A.M.C., Mr. G. H. D. Bourne, Mr. F. J. B. Dykes, Mr. M. S. Parry, Mr. C. Malcolm Cumming, Mr. F. M. Porcher, Mr. R. W. Harrison, Mr. T. Boyd, Mr. E. B. Skinner, Mr. John Gibson, Mr. C. Meikle, Mr. C. T. Hamerton, Mr. Eric Maxwell, Capt. H. F. Browell and Mr. W. Towgood, with the members of the Executive Committee, viz:—Sir W. Taylor, the Chairman of the R.G.A. (Mr. C. E. Emerson), Mr. A. Young, Mr. A. Lampard and Mr. W. J. Payne.

A meeting of this Committee will be held after the arrival in this country of Mr. W. F. Nutt as soon as may be convenient to him.

The Executive Committee at their last meeting approved and confirmed an advance of £25 which I had made to Mr.———— who is being again invalided out of the Army on account of foot trouble and approved a grant of £20 to Mr.———— to enable him to send necessaries and comforts to his son, now a prisoner of war at Mainz in Germany.

Although the existence of the Fund is widely known no other applications have been received, nor have I been able so far to ascertain by enquiry particulars of cases calling for attention. Later there will be no doubt many cases.

I have received to-day from the Secretary of the Planters' Association of Malaya a draft for £713.8.4 which I have lodged to the credit of the Fund in the Chartered Bank. This makes the balance to credit of the Fund to-day £1,726.9.6 in addition to £8,000 in Treasury Bills held by the Bank on account of the Fund.

In my letter of the 15th instant, I advised you of a contribution from the Brusch Tin and Rubber Estates Ltd., of £15.15.0, this was subsequently increased by another £5.5.0. I have also received from Mr. E. Cameron £2.2.0.

I am, etc.,
(Sgd.) W. Taylor.

The *Secretary* reports that he had informed Sir W. Taylor by last mail of one other case, in respect of a planter formerly in Johore.

Mr. *Macfadyen* says that there were two other local cases, in which assistance was being given to relatives; but these were being defrayed by the F. M. S. No. 2 Fund. As regards their own Planters' Fund, the meeting would remember that the F. M. S. Government was putting up dollar for dollar.

Mr. *Leggatt* wishes to know how the funds were invested.

Mr. *McCulloch* points out that these details were in the hands of their London Committee, to whom their Secretary remitted, whenever he had collected £500. The Committee, as they had just heard, was a very representative one and they could surely leave these matters in their hands. (Hear, Hear.)

The *Secretary* reports the despatch of the following cable, in which the Chambers of Commerce and of Mines had joined:

"Admiral Jellicoe, Grand Fleet, London."
"Malayan Chambers Commerce Planters' Association Chamber
"Mines unite offering congratulations on Jutland victory please
"convey specially Captain Officers Crew H. M. S. Malaya our pride
"and gratification of their share of action. Macfadyen."

(Applause.)

Mr. *McCulloch* presumes that the meeting would desire to express its hearty approval of the step taken. (Cheers). It ought to be a subject of pride to them that the *Malaya* was able to take part in the action so promptly and with such good effect. (Cheers.)

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14. Rubber Thefts.

The *Secretary* reads the following correspondence:—

Kuala Lumpur, 29th May, 1916.

Under Secretary, F. M. S.,
Kuala Lumpur.

Sir,

"2/1254."

I have the honour to confirm my letter of the 11th of April, to which I am as yet without a reply.

As another meeting of this Association is shortly to be held, I should be much obliged if you could inform me ere then as to what steps your Government proposes to take in the matter.

I have, etc.,
(Sgd.) H. C. E. Zacharias,
Secretary.

No. 1254/1916.

Kuala Lumpur, 1st June, 1916.

Sir,

I am directed to acknowledge receipt of your letter of the 29th May, 1916, on the subject of the increase of thefts of latex,

etc., and to inform you that the matter is still receiving the attention of the Government.

I have, etc.,
(Sgd.) W. Mackray,
for Under Secretary, F. M. S.

The Secretary,
Planters' Association of Malaya,
Kuala Lumpur.

Mr. *Knight* remarks that in Larut last year 20,700 pikuls had been sold by natives through small dealers. This was equivalent to an average yield of all land planted up in rubber at 371 lbs. per acre, while the average yield of European places in Larut was 161 lbs. per acre! These figures showed the manner in which thefts had increased in Larut alone.

Mr. *Phillips* points out that the records and books of these dealers were kept in Chinese and that Inspectors had to get them translated. He doubts whether the interpreters making the necessary translations could altogether be relied upon.

Mr. *Jeavons* would like all Associations to keep very careful records of all thefts. Obviously the question was not going to be attended to by Government without much delay and constant pressure on their part and they must be prepared to have their case always ready and up to date. He would propose that the Secretary ask all Constituent Associations to make monthly returns of all rubber thefts in their districts.

Mr. *Kindersley* seconds the proposal. Thefts were becoming more and more common and an ever increasing menace.

Mr. *McCulloch* agrees that they must put forward their complaint, until some remedy had been effected. In the meantime it seemed that the Government were really considering the matter and trying to assist them.

Mr. Jeavons' motion is carried unanimously.

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15. Amendment of Rules.

Mr. *McCulloch* says that Mr. Milne had proposed to substitute for Rule 4—"The Association shall consist of a President, a Vice-President and of Delegates from its constituent Associations;" and to substitute accordingly "President," for "Chairman" where occurring.

To substitute for 12, ii.—"Elect a President, Vice-President and Secretary for the current year."

Personally he thinks there was an American ring about the word "President" (Laughter), which he did not care for. However, as there seemed to be no proposer of the alteration present, the motion had to be dropped in any case.

He now proceeded to another proposal which came next on the agenda and stood in his own name, viz:

To substitute for Rules 6 and 9—

6. "Each Constituent Association shall be represented by one member for every 10,000 or part thereof of the planted acres represented by its members."

9. "The Annual contribution from each Constituent Association shall be on the basis of the planted acreage represented by each Constituent Association, and the amount shall be determined once a year at the Annual General Meeting, and shall become due on the 1st day of May of every year, and no Constituent Association shall have the right of voting or otherwise enjoy any of the privileges of the Association, until such annual subscription shall have been paid."

He would premise that the change advocated by him, was not intended to and in fact would not, interfere in the slightest with the internal economy of the Constituent Associations. The latter would go on raising their revenue in the way they deemed best and the only thing the new rule affected, was the *basis* of assessment. Clearly the existing method was unfair and unbusinesslike. It based contribution on the number of members, constituting an Association, without further defining what constituted membership; with the result that this basis could be manipulated, as undoubtedly it sometimes had been. He had in mind a case where 18 estates belonging to one and the same company, were returned by their Association as one member! The basis of assessment should be immutable and not open to manipulation. As for the amount to be assessed, this would have to be yearly fixed, when they knew what acreage each constituent association represented and what their estimated expenditure for the year was. He took it that before March of each year, each Association would have to make a return of its acreage at December 31st. As far as he could see from the figures he had at his disposal, an assessment of 1½ cent per cultivated and 1 cent per uncultivated acre would just about produce the same revenue, as the P. A. M. was getting at present.

An alternative suggestion that had been made, was to base the contribution on the production. This however implied a minimum subscription for places not yet in bearing—a provision that was

unfair in its incidence on small private estates as compared with large ones, owned by public companies.

Mr. *Dupuis Brown* seconds the proposal.

Mr. *Kindersley* thinks the scheme very good but doubts whether it was politic to decide the question to-day, without giving the Constituent Associations a further opportunity of expressing their views. He proposes that the associations be circularized on the subject and that the final decision be made at their next meeting.

Mr. *Jeavons* seconds and agrees that the matter required further ventilation, as until to-day many delegates had been quite unaware of the real meaning of the proposed change.

Mr. *Munro* considers the present meeting a thoroughly representative one and thinks the question had been postponed sufficiently long.

Mr. *Harvey* cannot see any reason for precipitancy, as anyhow these new rules would not apply until 1917.

Mr. Kindersley's amendment is then put to the vote and carried by 12 votes to 7.

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16. Date of Meetings.

Mr. *Dupuis Brown* expresses regret at the Standing Committee having overruled the decision arrived at last year, viz: that meetings shoud not be held on Sundays.

Mr. *Mooijaart* does not consider this a hard and fast rule, which it was impossible to override, if local circumstances demanded it.

Mr. *Harvey* proposes that their meetings be permanently fixed and suggests the last Wednesday of every alternate month.

Mr. *McCulloch* rules that notice must be given of such proposal.

Mr. *Harvey* gives notice now, so that his proposal may be placed on the agenda of the next meeting. In the meantime he moves that their next meeting be held at Kuala Lumpur, on Wednesday August 30th.

This is seconded by Mr. *Jeavons* and agreed to.

The Meeting terminates at 1.30 p.m.

H. C. E. ZACHARIAS,
Secretary.

Exports of Rubber from British Malaya, (other than the F. M. S.)

State.	Month.	Quantity.
Johore	May, 1916.	lbs. 1.986,571
Kelantan	May, 1916.	lbs. 143,497½
Kedah	May, 1916.	lbs. 515,939
Perlis	May, 1916.	lbs. 1,040
British N. Borneo	May, 1916.	lbs. 340,485
Brunei	May, 1916.	lbs. 8,641

Abstract of Meteorological Readings in the various Districts of Malaya for the month of May, 1916.

DISTRICT.	Mean Barometrical Pressure at 32° Fah.	Maximum in Sun.	TEMPERATURE.				HYGROMETER.				Prevailing Direction of Winds.	Total Rainfall.	Greatest Rainfall during 24 hours.
			Mean Dry Bulb.	Maximum.	Minimum.	Range	Mean Wet Bulb.	Vapour Tension.	Dew Point.	Humidity.			
Kelantan, Kota Bahru ...	...	140.	82.6	91.03	73.93	17.10	77.5	.840	74.0	75.	...	9.98	3.49
Pahang, Kuala Lipis ...	...	...	81.7	90.6	73.2	17.4	76.5	...	...	...	...	11.59	2.11
Johore, Johore Bahru ...	...	...	...	88.77	74.20	14.57	...	...	...	...	...	12.21	...
Singapore, Kandang Kerbau	29.765	158.	83.9	88.8	75 0	13.8	79.0	.920	...	81.	...	9.43	3.32
Malacca, Durian Daun ...	29.787	140.9	82.6	88.1	72.3	15.8	79.	.956	...	86.	W.	5 42	2.52
Negri Sembilan, Seremban	...	156.1	79.1	88.7	71.4	17.3	75.8	.800	73.2	81.6	N.W.	9.19	1.45
,, Kuala Pilah ...	..	146.0	82.4	90.8	73.9	16.9	79.1	.933	77.1	83.5	...	7.88	2.22
,, Port Dickson	...	123.3	82.5	87.6	75.0	12.6	78.2	.880	75.5	79.3	...	4.69	.90
Selangor, Kuala Lumpur ...	29.767	143.9	81.1	87.0	75.9	11.1	77.3	.831	74.3	80.	Calm.	5.22	1.32
,, Klang ...	...	...	81.2	85.5	74.6	10.9	77.1	...	...	...	...	4.20	.76
,, Kuala Selangor ...	...	..	...	89.4	75.5	13.9	...	...	...	...	...	3.30	1.19
,, Rawang ...	...	...	...	92.3	...	...	...	...	...	...	...	3.55	1.02
Perak, Telok Anson ...	...	...	82.47	93.	72.	21.	78.41	.918	...	83.	...	7.35	1.54
,, Ipoh ...	...	...	81.95	95.	71.	24.	77.31	.876	74.42	81.	...	13.38	2.10
,, Taiping ...	...	115.	81.92	94.	73.	21.	77.63	.891	...	83.	...	11.53	2.44
,, The Cottage ...	...	...	...	...	...	...	...	...	...	...	...	15.06	2.29
,, Parit Buntar ...	...	...	83.22	93.	73.	20.	78.36	.905	...	81.	...	3.56	.72
Penang, Georgetown ...	29.744	138.7	83.2	89.3	74.1	15.2	78.5	.910	76.4	80.	E.	9.96	1.25
Kedah, Alor Star ...	...	...	...	...	...	...	...	...	...	...	...	18.83	3.73
Perlis, Perlis ...	...	...	...	87.90	75.29	12.61	...	...	...	...		9	...